

EXHIBIT 40

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

)
CISCO SYSTEMS, INC.,)
Plaintiff,)
vs.) Case No.:
5:14-cv-05344-BLF (PSG)
ARISTA NETWORKS, INC.,)
)
Defendant.)

ATTORNEYS' EYES ONLY - HIGHLY CONFIDENTIAL
VIDEOTAPED DEPOSITION OF ABHAY ROY
Palo Alto, California
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Volume 1

Reported by:
RACHEL FERRIER
CSR No. 6948
Job No. 2200521
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1 Obviously we are not going to stop the deposition 09:47AM
2 so that this witness can review a 600-page document, but 09:47AM
3 given that he and counsel are looking at it and at 09:47AM
4 particular pages you want us to look at it one point in 09:48AM
5 time out of context, we will object to all questions on 09:48AM
6 that basis. 09:48AM

7 MR. SILBERT: Okay. Well, it's a Cisco document, 09:48AM
8 and I'm about to ask him about a command listed here 09:48AM
9 that he purports to be the author of. 09:48AM

10 Q So if you look at page 29, do you have that in 09:48AM
11 front of you? 09:48AM

12 A Yeah, I have. 09:48AM

13 Q Do you see, at the top of that page, there's a 09:48AM
14 listing for "bfd all-interfaces," and then it says, in 09:48AM
15 capitals, "IRI, RIP, IPV6"? 09:48AM

16 A Yes, I do. 09:48AM

17 Q My question is: What do those letters in 09:48AM
18 capitals signify? 09:48AM

19 A IRI, I can't tell you. RIP is -- is routing 09:48AM
20 protocol. I think it's routing information protocol. 09:48AM
21 IP Version 6 is probably Internet Protocol Version 6. 09:49AM

22 Q Do you have an understanding as to why these 09:49AM
23 indications are in all capitals? 09:49AM

24 A So a lot of times we try to abbreviate things so 09:49AM
25 that if the reader is reading the document and 09:49AM

1 encounters a shorter version, they can expand it, and if 09:49AM
2 RIP is used further down the document, you can keep 09:49AM
3 saying router information protocol or you can shorthand 09:49AM
4 it, and, typically, at the first documents, you will 09:49AM
5 have both versions, which this is the shorthand for 09:49AM
6 that. 09:49AM

7 Q Are these capitalized letters actually part of 09:49AM
8 the CLI command or are they there for some different 09:49AM
9 reason? 09:49AM

10 MR. NEUKOM: Objection; vague and compound. 09:49AM

11 THE WITNESS: I mean, just looking at this, it's 09:49AM
12 hard to say. There's probably a more detailed document 09:49AM
13 on this command that can probably tell us more. Just by 09:49AM
14 looking at it, it's hard to say what it's trying to say. 09:50AM
15 BY MR. SILBERT: 09:50AM

16 Q You claim to be the person who authored the 09:50AM
17 command "bfd all-interfaces"; correct? 09:50AM

18 MR. NEUKOM: Objection; misstates prior 09:50AM
19 statements and calls for a legal conclusion. 09:50AM

20 THE WITNESS: So bfd all-interfaces is -- is -- 09:50AM
21 looks like a broader implication for various protocols. 09:50AM
22 My involvement has been on OSPF site, and I have written 09:50AM
23 some code on OSPF, which makes use of bfd 09:50AM
24 all-interfaces. 09:50AM

25 Is that what you are asking? 09:50AM

1 BY MR. SILBERT: 09:50AM

2 Q Okay. Well, let me just understand. 09:50AM

3 Did -- is it true that you did not author the 09:50AM

4 command "bfd all-interfaces"? 09:50AM

5 MR. NEUKOM: Objection; calls for a legal 09:50AM

6 conclusion. 09:50AM

7 THE WITNESS: So bfd all-interfaces code I have 09:50AM

8 written for OSPF. 09:50AM

9 BY MR. SILBERT: 09:51AM

10 Q Okay. I'm sorry, did I -- were you finished? 09:51AM

11 A Yes. 09:51AM

12 Q Okay. Did you come up with the phrase 09:51AM

13 "bfd all-interfaces" or did someone else do that? 09:51AM

14 A So this is -- this is quite dated. My best 09:51AM

15 recollection is we actually looked at a variety of IPv6 09:51AM

16 protocols, and we were trying to figure out what could 09:51AM

17 be one of the -- one of the best ways to express this. 09:51AM

18 So this is more of a collaborative effort. I cannot 09:51AM

19 take credit of coming up with it. It's a team of 09:51AM

20 engineers actually who looked into it, how this fits 09:51AM

21 into the bigger -- bigger piece of organization of 09:51AM

22 commands, what makes sense, what is more aesthetically 09:51AM

23 correct in the -- in the correct scope and with the 09:51AM

24 choices we had and the team of engineers, I believe, who 09:51AM

25 came up with this. 09:51AM

1 Q Okay. So if you can't take credit for coming up 09:51AM
2 with the phrase "bfd all-interfaces," who, to your 09:51AM
3 knowledge, on the team of engineers came up with that 09:52AM
4 phrase? 09:52AM
5 MR. NEUKOM: Objection; misstates prior 09:52AM
6 testimony. 09:52AM
7 THE WITNESS: Can't recollect exactly, was it one 09:52AM
8 engineer or was it a bunch of proposals we had and we 09:52AM
9 collectively said this -- this is the best thing to go 09:52AM
10 with. 09:52AM
11 BY MR. SILBERT: 09:52AM
12 Q Okay. So you don't know who came up with the 09:52AM
13 phrase "bfd all-interfaces"? 09:52AM
14 A I can't at this point, yeah. 09:52AM
15 Q Okay. But you do know, I believe you said, that 09:52AM
16 when the team of engineers was working, doing the work 09:52AM
17 that resulted in that phrase, they were consulting 09:52AM
18 protocols or industry standards; correct? 09:52AM
19 MR. NEUKOM: Objection; misstates prior 09:52AM
20 testimony. 09:52AM
21 THE WITNESS: So it's a team of engineers are 09:52AM
22 typically looking at what is the best way to express a 09:52AM
23 certain functionality, right? And they are trying to 09:52AM
24 come up with the best possible command-line interface, 09:52AM
25 and -- and we can get into sort of why and -- and what 09:52AM

1 is the process and so on, right? 09:53AM

2 In Cisco, there is -- there is a team of people 09:53AM

3 who are part of alias called "parser police." What they 09:53AM

4 do is if you want to write a new command, you send them 09:53AM

5 your proposal. They review it. They will tell you that 09:53AM

6 you are not going in the right direction, because they 09:53AM

7 are guiding the overall architecture purity. They are 09:53AM

8 giving you the overall choice on how to sort of design 09:53AM

9 such things. 09:53AM

10 What I was trying to say is the team of engineers 09:53AM

11 write proposals, send it to parser police, for example, 09:53AM

12 for their governance, and what finally gets decided, 09:53AM

13 again, among engineers and the governance party, is what 09:53AM

14 developers implement at the end of the day. 09:53AM

15 (Discussion off the stenographic record.) 09:53AM

16 BY MR. SILBERT: 09:53AM

17 Q Okay. Understanding that you didn't come up with 09:54AM

18 the phrase bfd all-interfaces, you are familiar with 09:54AM

19 that CLI command; correct? 09:54AM

20 A Yes, I am. 09:54AM

21 MR. NEUKOM: Objection; compound. 09:54AM

22 BY MR. SILBERT: 09:54AM

23 Q Would a -- strike that. 09:54AM

24 Is it -- I just want to use the correct 09:54AM

25 terminology. 09:54AM

1 Would you say that it's system administrators who 09:54AM
2 are entering CLI commands? Should we call them "users"? 09:54AM
3 What would make the most sense? 09:54AM
4 MR. NEUKOM: Objection to form. 09:55AM
5 THE WITNESS: I mean, any person who wants to 09:55AM
6 configure a device, so you could choose any language. 09:55AM
7 You could choose a "user." You could choose "operator." 09:55AM
8 MR. SILBERT: Okay. 09:55AM
9 THE WITNESS: You could choose variety of 09:55AM
10 different titles. 09:55AM
11 BY MR. SILBERT: 09:55AM
12 Q Okay. If an operator wanted to enter this 09:55AM
13 command, what would he or she actually type into the 09:55AM
14 interface? 09:55AM
15 A So -- so when you -- 09:55AM
16 MR. NEUKOM: Objection; vague. 09:55AM
17 THE WITNESS: -- when you said "this command," 09:55AM
18 you will have to be a little bit more explicit, right? 09:55AM
19 because the document clearly says this command is 09:55AM
20 applicable for variety of different technologies. 09:55AM
21 So, first, you have to get to which technology 09:55AM
22 are you talking about, and then how do you configure 09:55AM
23 that, and how do you type in the right place. It's 09:55AM
24 quite -- quite a bit to get to the question you are 09:55AM
25 asking, that what will he type. 09:55AM

1 BY MR. SILBERT: 11:19AM

2 Q What was your personal involvement, if any, in 11:19AM

3 naming the "bfd all-interfaces" command? 11:19AM

4 A So I remember the implementation part of the 11:19AM

5 command where I was a developer writing the code and 11:19AM

6 implementing the command. 11:19AM

7 In the naming part, as I said, I don't quite 11:19AM

8 recollect was it my idea or was it a collaborative idea 11:19AM

9 which finally came to these exact choice of words, yeah, 11:19AM

10 so I don't recall. Probably participated in the 11:19AM

11 discussion of coming to this exact command syntax. 11:19AM

12 Q Okay. Where you say "probably participated in 11:19AM

13 the discussion," do you have any recollection of 11:20AM

14 participating in a discussion that came to this exact 11:20AM

15 command syntax? 11:20AM

16 A Yeah, so no specific recollection. 11:20AM

17 Q Do you have a general recollection of 11:20AM

18 participating in that discussion? 11:20AM

19 A The general recollection is, again, based on some 11:20AM

20 of the earlier comments I made. The -- the way we 11:20AM

21 actually design a new command is the team talks about 11:20AM

22 it. The team brainstorms about it, and I was part of 11:20AM

23 the team working at that time, so it will be hard to 11:20AM

24 believe that I was hiding under the table not really 11:20AM

25 doing anything, so I was probably participating. That's 11:20AM

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1 where the "probably" comes from. 11:20AM

2 Q Okay. But you don't have any actual image in 11:20AM

3 your head of those discussions; is that right? 11:20AM

4 A That's correct. 11:20AM

5 Q Okay. Why don't you go back to -- let's -- let's 11:20AM

6 look again at Exhibit 54, this table, and would you 11:20AM

7 please turn to page 12. 11:20AM

8 Do you see, a little more than midway down the 11:21AM

9 page, the Command Expression in the left-hand column 11:21AM

10 "ip ospf authentication"? 11:21AM

11 A Yeah, I see that. 11:21AM

12 Q Okay. And do you see the next column with the 11:21AM

13 heading "Author/Originator Information"? It says 11:21AM

14 "Cisco" and then your name? 11:21AM

15 A Yes, I see that. 11:21AM

16 Q Did you come up with the expression "ip ospf 11:21AM

17 authentication"? 11:21AM

18 A I'll probably give you a similar answer; that I 11:21AM

19 was part of the team who were working on it. Was this 11:21AM

20 purely me or was it a combined brainstorming with the 11:21AM

21 team, I don't have specific recollection. 11:21AM

22 Q Okay. And similar to the "bfd all-interfaces" 11:22AM

23 command that we discussed, do you have any knowledge of 11:22AM

24 what person or persons actually came up with the 11:22AM

25 expression "ip ospf authentication"? 11:22AM

1 MR. NEUKOM: Objection; asked and answered. 11:22AM

2 THE WITNESS: Yeah, no specific names I can cite, 11:22AM

3 but, again, this is similar to what I said. The team 11:22AM

4 talks about it and comes up with the name. Who -- who 11:22AM

5 seeded the word or part of the word and how we arrived 11:22AM

6 at the final word, no specific recollection. 11:22AM

7 BY MR. SILBERT: 11:22AM

8 Q Okay. And, again, I -- I'm assuming this is 11:22AM

9 true, but correct me if I'm wrong. 11:22AM

10 You -- you have no image in your head of any 11:22AM

11 discussions surrounding this particular term with 11:22AM

12 respect to coming up with this expression? 11:23AM

13 A That's correct, no specific recollection. 11:23AM

14 Q Okay. What is the function of the command 11:23AM

15 "ip ospf authentication"? 11:23AM

16 A This command is at a -- at a interface level, if 11:23AM

17 I remember, and what this does is if -- if two devices 11:23AM

18 are talking OSPF, you can configure both devices to -- 11:23AM

19 to do some level of encoding in the packets so that they 11:23AM

20 can validate each other. There are different types of 11:23AM

21 authentication. There is -- if I remember, again, 11:23AM

22 correctly, there is a clear text authentication. There 11:23AM

23 is a message digest -- digest authentication, and I 11:23AM

24 think those are the -- those are the additional keywords 11:23AM

25 associated with this command. 11:24AM

1 Q Okay. What's the significance of the term "ip" 11:24AM
2 at the start of this command? 11:24AM
3 A IP -- I think we -- we kept "ip" as the top-level 11:24AM
4 keyword for things which were related to IP before, so 11:24AM
5 "ip" really implies IP Version 4. 11:24AM
6 Q Okay. And just to back up for a second, IP 11:24AM
7 stands for Internet protocol; correct? 11:24AM
8 A That is correct. 11:24AM
9 Q And IPv4 stands for -- or refers to Version 4 of 11:24AM
10 the Internet protocol; is that correct? 11:24AM
11 A That is correct. That is correct. 11:24AM
12 Q And the Internet protocol is specified in a 11:24AM
13 standard published by the IETF; correct? 11:24AM
14 A That it's correct. 11:24AM
15 Q And IPv4 is specified in a standard published by 11:24AM
16 the IP -- IETF; correct? 11:25AM
17 A Yes, that's correct. 11:25AM
18 Q Okay. The acronym IP was used by the industry to 11:25AM
19 refer to Internet protocol before Cisco used it in CLI 11:25AM
20 commands; correct? 11:25AM
21 MR. NEUKOM: Objection; foundation. 11:25AM
22 THE WITNESS: So the term "IP," just like we 11:25AM
23 discussed for BFD -- right? -- when you write Internet 11:25AM
24 standard, you try to abbreviate technologies, and, 11:25AM
25 again, we can look at that document and confirm that's 11:25AM

1 true or not. I'm guessing it says Internet protocol and 11:25AM
2 that abbreviates it as "IP," and the document refers to 11:25AM
3 that so that you don't have to keep saying "Internet 11:25AM
4 protocol" or "Internet Protocol Version 4." 11:25AM

5 MR. NEUKOM: By the way, David, while you are 11:26AM
6 getting a new document, just as a housekeeping matter, 11:26AM
7 30 minutes or so ago I objected to a question you asked 11:26AM
8 the witness on the basis of attorney-client privilege, 11:26AM
9 and I meant to have objected on the basis of attorney 11:26AM
10 work product. 11:26AM

11 MR. SILBERT: Okay. 11:26AM

12 MR. NEUKOM: So. 11:26AM

13 BY MR. SILBERT: 11:26AM

14 Q This is -- let me show you a document that's 11:26AM
15 already been marked as Exhibit 29 in this case. 11:26AM

16 Do you recognize this document? 11:26AM

17 A Yes, I do. 11:27AM

18 Q What is it? 11:27AM

19 A This is an RFC which details the Internet 11:27AM
20 protocol. 11:27AM

21 Q And the publication date shown here is 11:27AM
22 September 1981; correct? 11:27AM

23 A Yes, that is correct. 11:27AM

24 Q And was this, to your knowledge, the first 11:27AM
25 version of the Internet protocol that's described in 11:27AM

1	this document, Exhibit 29?	11:27AM
2	MR. NEUKOM: Objection; foundation.	11:27AM
3	THE WITNESS: So I'm just reading page 1 -- or	11:27AM
4	what you have in your bottom as 1557. Just below the	11:27AM
5	RFC 791, it says, Replaces RFC 760, which generally	11:27AM
6	implies there was prior work, which -- which his	11:27AM
7	supersedes.	11:27AM
8	BY MR. SILBERT:	11:28AM
9	Q Okay. And forgive me if I've asked you this --	11:28AM
10	(Discussion off the stenographic record.)	11:28AM
11	BY MR. SILBERT:	11:28AM
12	Q I apologize if I've asked you this already, but	11:28AM
13	have -- have you heard the Internet protocol abbreviated	11:28AM
14	IP outside the context of Cisco?	11:29AM
15	A As in what are the other possible abbreviations?	11:29AM
16	For example, intellectual property we use "IP" term all	11:29AM
17	the time.	11:29AM
18	Q We do that too. No.	11:29AM
19	My question is: Have you heard the abbreviation	11:29AM
20	IP used to refer to the Internet protocol outside the	11:29AM
21	context of Cisco?	11:29AM
22	MR. NEUKOM: Objection; vague.	11:29AM
23	THE WITNESS: So in -- in IETF -- as part of my	11:29AM
24	role in IETF, people do loosely refer Internet Protocol	11:29AM
25	Version 6 as "IP," as -- as one -- one of the variants.	11:29AM

1 sit here today, of who else was on the team that came up 12:35PM
2 with the command "ip ospf authentication"? 12:35PM
3 A Yes. 12:35PM
4 Q Okay. Who else was on the team that came up with 12:35PM
5 the command "bfd all-interfaces"? 12:35PM
6 A That was on page 3? 12:35PM
7 Q Correct. 12:35PM
8 MR. NEUKOM: Page 3 of Exhibit 54. 12:35PM
9 THE WITNESS: This is actually much later than 12:36PM
10 that, so this -- I'm just going with the date, which is 12:36PM
11 also listed here, 2004 to 2005. We had different 12:36PM
12 engineers around that time on those PF [phonetic] team. 12:36PM
13 Couple names I can recollect. One was Liem, L-i-e-m, 12:36PM
14 and Nguyen, N-g-y-u-e-n, I think. Last name may have 12:36PM
15 spelled incorrectly. Another engineer was Peter, 12:36PM
16 P-e-t-e-r, Psenak, P-s-e-n-a-k. There are probably more 12:36PM
17 names, but those are a couple of names. 12:37PM
18 BY MR. SILBERT: 12:37PM
19 Q Okay. Are you able to tell me any other names of 12:37PM
20 people who are on the team who named the command 12:37PM
21 "bfd all-interfaces"? 12:37PM
22 A Yeah, I don't recall any more specific names. I 12:37PM
23 mean, there are people around that time, but I want to 12:37PM
24 make sure that they were in Cisco at that time. 12:37PM
25 For example, there is one engineer called Acee, 12:37PM

1 A-c-e-e, Lindem, L-i-n-d-e-m, but I'm not 100 percent 12:37PM
2 sure if he was still on that team or he left Cisco by 12:37PM
3 that time. 12:37PM

4 Q Okay. Can you remember any other names of people 12:37PM
5 who were on the team? 12:37PM

6 A Nothing is coming to my head. 12:37PM

7 Q Okay. Referring back to Exhibit 54, would you 12:38PM
8 please turn to page 12. 12:38PM

9 A Yeah, I'm there. 12:38PM

10 Q In the bottom third of the page, do you see the 12:38PM
11 command expression "ip ospf bfd"? 12:38PM

12 A Yes. 12:38PM

13 Q Okay. And then in the next column with the 12:38PM
14 heading "Author/Originator Information," it says "Cisco" 12:38PM
15 and your name; correct? 12:38PM

16 A Yes. 12:38PM

17 Q Did you come up with the expression "ip ospf 12:38PM
18 bfd"? 12:38PM

19 A Yeah, so BFD -- I was the lead implementer of it 12:38PM
20 and very likely I proposed the -- the command. 12:39PM

21 Q Okay. And you say very likely you proposed the 12:39PM
22 command. 12:39PM

23 Do you have any recollection of doing that? 12:39PM

24 A I don't remember anybody else worked on it, so 12:39PM
25 I -- I proposed the command. Yeah, I think I proposed 12:39PM

1 the command. I don't think there was anybody else on 12:39PM
2 this project. 12:39PM
3 Q Okay. And I appreciate your reasons for saying 12:39PM
4 that, but my question is: Do you have any recollection 12:39PM
5 of proposing this command "ip ospf bfd"? 12:39PM
6 A Yes. 12:39PM
7 MR. NEUKOM: Objection; asked and answered. 12:39PM
8 BY MR. SILBERT: 12:39PM
9 Q What's your recollection? 12:39PM
10 A I remember the document which described this, and 12:39PM
11 I think I was -- I was the author of the document. It's 12:39PM
12 a small amount of work. And generally what happens is 12:39PM
13 if there is large project, you have a larger group of 12:39PM
14 people who work on the project. For smaller ones, you 12:40PM
15 are the sole implementer, so you pretty much do most of 12:40PM
16 the work, all the way from designing the command and the 12:40PM
17 implementation. This was another smaller features. 12:40PM
18 Q Okay. The term "ip" in the command "ip ospf bfd" 12:40PM
19 refers to the Internet protocol standard that's 12:40PM
20 specified by the IETF; correct? 12:40PM
21 A "ip" in this command refers to Internet Protocol 12:40PM
22 Version 4, which is documented in RFC 791, and there 12:40PM
23 might be further revisions of it, if not. 12:40PM
24 Q Okay. And the term "ospf" in the command 12:40PM
25 "ip ospf bfd" refers to the OSPF standard that's 12:40PM

1 specified by the IETF; correct? 12:40PM

2 A Yes. 12:40PM

3 MR. NEUKOM: Objection; misstates prior 12:41PM

4 testimony, calls for opinion. 12:41PM

5 THE WITNESS: The OSPF acronym we have used is 12:41PM

6 for Open Shortest Path First protocol, which is also 12:41PM

7 described and captured in RFC. 12:41PM

8 BY MR. SILBERT: 12:41PM

9 Q Okay. And the -- the term "bfd" in the command 12:41PM

10 "ip ospf bfd" refers to the BFD standard that's 12:41PM

11 specified by the IETF; correct? 12:41PM

12 A BFD acronym stands for Bidirectional Forwarding 12:41PM

13 Detection, which is -- which is, yes, also captured in 12:41PM

14 IETF RFC. 12:41PM

15 Q And the BFD standard itself describes using BFD 12:41PM

16 with OSPF; is that correct? 12:41PM

17 MR. NEUKOM: Objection; document calls for its -- 12:41PM

18 pardon me. Document speaks for itself, calls for 12:42PM

19 opinion testimony. 12:42PM

20 THE WITNESS: BFD spec -- again, my recollection 12:42PM

21 is BFD spec was written in a more generic sense. It may 12:42PM

22 or may not have explicitly called out how and which 12:42PM

23 protocols you can -- you can make use of it, but, again, 12:42PM

24 if you have some more text, I can look into it. 12:42PM

25 // 12:42PM

1 THE WITNESS: Okay. I mean, from -- I mean, this 12:48PM
2 is probably a more broader comment. I don't recall 12:48PM
3 seeing any specifics of what command somebody should 12:48PM
4 implement. They typically talk about the customer wants 12:48PM
5 to get this functionality, not how Cisco should 12:48PM
6 implement from the CLI perspective. That will be rare 12:48PM
7 if somebody even ventures into that. 12:48PM

8 BY MR. SILBERT: 12:48PM

9 Q Are you aware of Cisco customers providing any 12:49PM
10 feedback on CLI commands? 12:49PM

11 MR. NEUKOM: Same objections; vague, compound. 12:49PM

12 THE WITNESS: I'm not aware of anything in 12:49PM
13 particular. 12:49PM

14 BY MR. SILBERT: 12:49PM

15 Q Are you aware of anything in general? 12:49PM

16 A We do something called "early field trial," which 12:49PM
17 typically happens if a new product goes out or a new 12:49PM
18 software release goes out. Customers will typically try 12:49PM
19 your functionality and give you feedback in terms of how 12:49PM
20 they want to change the functionality, if it is not 12:49PM
21 meeting their exact functional needs. So we get 12:49PM
22 feedbacks on -- on that type of thing; that, "I asked 12:49PM
23 you to do this, but your thing is doing slightly 12:49PM
24 different. Can you change the behavior of that?" 12:49PM

25 Command line kind of thing, customers don't care. 12:49PM

1 They don't want to get into. Cisco does what Cisco 12:49PM
2 does. 12:50PM
3 Q Okay. Let's go back to Exhibit 54, and could you 12:50PM
4 please turn to page 16. 12:50PM
5 Do you see the command "IPv6 ospf area"? It's 12:50PM
6 third from the bottom. 12:50PM
7 A Yes. 12:50PM
8 Q And you are indicated as the author, slash, 12:50PM
9 originator with respect to that command; is that 12:50PM
10 correct? 12:50PM
11 A Yes. 12:50PM
12 Q Did you come up with the expression "IPv6 ospf 12:50PM
13 area"? 12:50PM
14 A Yes. So -- yes. I mean, the answer is yes. 12:50PM
15 Q You, personally, did that, or you were part of a 12:50PM
16 team that did that? 12:50PM
17 A So that's what I was thinking. It was -- it was 12:51PM
18 a set of people, but I was the lead developer, so I 12:51PM
19 wrote the initial functional spec, initial design and 12:51PM
20 initial user interface, but there were different 12:51PM
21 implementer -- implementers who were part of the 12:51PM
22 project, so they helped code it, basically. 12:51PM
23 Q Okay. And do you know whether, in the initial 12:51PM
24 functional spec and design and user interface, the 12:51PM
25 command that you proposed was "IPv6 ospf area" versus 12:51PM

1 some other command? 12:51PM

2 MR. NEUKOM: Objection; vague and compound. 12:51PM

3 THE WITNESS: I don't recall if we -- if we ever 12:51PM

4 had multiple iterations on this particular command. In 12:51PM

5 the slightly longer context is OSPF Version 3 was 12:52PM

6 inspired and seeded with some of the same concepts we 12:52PM

7 had in OSPF Version 2, so when we designed the CLI, it 12:52PM

8 was actually more to align how OSPF Version 2 things are 12:52PM

9 structured and -- yeah. 12:52PM

10 BY MR. SILBERT: 12:52PM

11 Q So -- right. 12:52PM

12 What -- tell me why you are referring to OSPF 12:52PM

13 Version 3? 12:52PM

14 A So IPv6 OSPF is -- is what is referred to as OSPF 12:52PM

15 Version 3. So, again, the longer story there is OSPF 12:52PM

16 had a first version -- I should say second version, OSPF 12:52PM

17 second -- Version 2 was the real version which most 12:52PM

18 people actually implemented and deployed. That only 12:52PM

19 supported IP Version 4 prefix routing. 12:52PM

20 When IP Version 6 became popular, OSPF had to 12:53PM

21 reinvent itself, and OSPF Version 3 came along, which is 12:53PM

22 a separate Internet -- Internet RFC, right? 12:53PM

23 So if you look at RFC OSPF Version 3, it came 12:53PM

24 later when IPv6 work was happening. So if you see 12:53PM

25 things which are referred to IPv6 OSPF, they are 12:53PM

1 referring to OSPF Version 3. We could have chosen to 12:53PM
2 call it OSPFv3, or OSPF Version 3. We chose to call it 12:53PM
3 IPv6 OSPF in our command syntax. 12:53PM

4 Q So before you named the IPv6 OSPF area command, 12:53PM
5 Cisco already used a command with a name "ip ospf area"; 12:53PM
6 correct? 12:53PM

7 A That is correct. 12:53PM

8 Q Okay. 12:53PM

9 A And "ip ospf" there referred to OSPF Version 2. 12:53PM

10 Q Right. 12:53PM

11 And IPv6 refers to Version 6 of the IP protocol; 12:53PM
12 correct? 12:54PM

13 A IP version -- yes. IPv6 refers to Version 6 of 12:54PM
14 the IP protocol, which is a different Internet RFC. 12:54PM

15 Q Right. 12:54PM

16 And -- and in that RFC -- and I'm happy to show 12:54PM
17 it to you if you want -- the -- it uses -- that RFC uses 12:54PM
18 the acronym IPv6; correct? 12:54PM

19 A I don't recall if it does or does not. 12:54PM

20 (Exhibit 58 was marked for 12:54PM
21 identification by the Court Reporter.) 12:54PM

22 BY MR. SILBERT: 12:54PM

23 Q Mr. Roy, would you please look at Exhibit 58 and 12:55PM
24 tell me if you recognize it. 12:55PM

25 A Yes, I do. 12:55PM

1 different RFC, which is the OSPF Version 3 RFC, but if 12:57PM
2 you just told me "OSPF," I would have interpreted it as 12:57PM
3 you mean OSPF Version 2, which is a different RFC, just 12:57PM
4 for semantics. 12:57PM

5 Q Understood, and you explained to me previously 12:57PM
6 that the reason OSPF Version 3 was developed was to 12:57PM
7 accommodate IPv6; correct? 12:57PM

8 A That's correct. 12:57PM

9 Q Okay. And we may have discussed this earlier, 12:57PM
10 but area is a parameter that's introduced in the OSPF 12:57PM
11 specification; correct? 12:57PM

12 A Area is a collection or a cluster of devices. 12:57PM
13 That concept does exist in -- in the RFCs, yes. 12:57PM

14 Q Okay. And the RFCs refer to it as "area"; right? 12:57PM

15 A RFC documents does use the word "area," yes. 12:57PM

16 Q Okay. Is it a fair statement that when you came 12:58PM
17 up with the command "ipv6 ospf area," what you did was 12:58PM
18 refer to the pre-existing command "ip ospf area" and 12:58PM
19 changed the "ip" to "ipv6" because you were now dealing 12:58PM
20 with the IP Version 6? 12:58PM

21 MR. NEUKOM: Objection; vague and compound. 12:58PM

22 THE WITNESS: So we looked at -- we looked at 12:58PM
23 what is existing in -- in Cisco IOS implementation, and 12:58PM
24 that, generally, is one of the overriding things; that 12:58PM
25 don't reinvent the wheel. If there is something which 12:58PM

1 is done, go with it. 12:58PM

2 Some of the other ways to do that could be, you 12:58PM

3 could just say "ospfv3 area." We chose to call it "ipv6 12:58PM

4 ospf area." 12:59PM

5 BY MR. SILBERT: 12:59PM

6 Q And -- and did you model the command "ipv6 ospf 12:59PM

7 area" on the pre-existing command "ip ospf area"? 12:59PM

8 MR. NEUKOM: Objection; vague. 12:59PM

9 THE WITNESS: The pre-existence of "ip ospf area" 12:59PM

10 was a strong motivator for us to converge on this 12:59PM

11 choice. 12:59PM

12 BY MR. SILBERT: 12:59PM

13 Q Okay. Who else was on the team that -- I mean, I 12:59PM

14 understand you are saying you -- you did come up with 12:59PM

15 this command, but who else was on the team with you at 12:59PM

16 the time you came up with this command? And by "this 12:59PM

17 command," I'm referring to "ipv6 ospf area." 12:59PM

18 A I think there were multiple engineers. I can't 12:59PM

19 recollect the exact names at this point. 01:00PM

20 Q Okay. Let's move on. 01:00PM

21 Do you still have page 16 of Exhibit 54 in front 01:00PM

22 of you? 01:00PM

23 A Yes, I do. 01:00PM

24 Q Next is "ipv6 ospf cost." 01:00PM

25 Do you see that, second from the bottom? 01:00PM

1 A Yes, I do. 01:00PM

2 Q And, again, you are indicated as the author, 01:00PM

3 slash, originator with respect to that command 01:00PM

4 expression. 01:00PM

5 Do you see that? 01:00PM

6 A Yes. 01:00PM

7 MR. NEUKOM: Objection; misstates -- 01:00PM

8 mischaracterizes the document. 01:01PM

9 BY MR. SILBERT: 01:01PM

10 Q Okay. You and Cisco are indicated as the author, 01:01PM

11 slash, originator; is that correct? 01:01PM

12 A Yeah, that's correct. 01:01PM

13 Q And did you come up with the expression "ipv6 01:01PM

14 ospf cost"? 01:01PM

15 A Yeah, it's the same. If you see the document, 01:01PM

16 which it lists the EK number, it's part of the same 01:01PM

17 document, so this and anything which talks about IPv6 01:01PM

18 OSPF is all part of sort of one development deferred, 01:01PM

19 and all those commands pretty much follow the same 01:01PM

20 paradigm. 01:01PM

21 But to answer your specific question, yes, I 01:01PM

22 wrote that document and pretty much came up with the 01:01PM

23 whole IPv6 OSPF command set. 01:01PM

24 Q And we can go through these one by one, and I 01:01PM

25 suspect we will, but isn't it true that for every 01:01PM

1 command for which your name appears in the 01:01PM
2 author/originator column that starts with "ipv6," that 01:02PM
3 command is identical to a pre-existing command, with the 01:02PM
4 only difference that the pre-existing command used "ip" 01:02PM
5 instead of "ipv6"? 01:02PM
6 MR. NEUKOM: Objection; vague, compound. 01:02PM
7 THE WITNESS: So I'll have to see the -- the 01:02PM
8 complete list of commands to make that statement. I'm 01:02PM
9 not sure if this has the complete list, but if you have 01:02PM
10 the both -- the command set -- 01:02PM
11 BY MR. SILBERT: 01:02PM
12 Q Well, you do have it in front of you in this 01:02PM
13 large document, but I don't know that it's the best use 01:02PM
14 of our collective time to -- for you to go point by 01:02PM
15 point. 01:02PM
16 A Sure. 01:02PM
17 Q With respect to specifically the command "ipv6 01:02PM
18 ospf cost," did you model that on a pre-existing command 01:02PM
19 used at Cisco, "ip ospf cost"? 01:02PM
20 A Yes, that is correct. 01:03PM
21 Q Okay. And in the command, "ipv6" refers to 01:03PM
22 Version 6 of the IP standard that's specified by the 01:03PM
23 IETF; correct? 01:03PM
24 A Correct. "ipv6" refers to Internet Protocol 01:03PM
25 Version 6 as specified in the RFC. 01:03PM

1 that. 01:28PM

2 Q Was it one of the main reasons or the dominant 01:28PM

3 reason? 01:28PM

4 A Main reason, dominant reason, same thing in my 01:28PM

5 mind. 01:28PM

6 Q Okay. But was it one of, or was it the dominant 01:28PM

7 reason? 01:28PM

8 MR. NEUKOM: Objection; asked and answered. 01:28PM

9 THE WITNESS: Yeah, this was the dominant reason. 01:28PM

10 BY MR. SILBERT: 01:28PM

11 Q Okay. And in the command "ipv6 ospf 01:28PM

12 transmit-delay," "ipv6" refers to Internet Protocol 01:28PM

13 Version 6 as specified by IETF; correct? 01:28PM

14 A That is correct. 01:29PM

15 Q And in the command "IPv6 ospf transmit-delay," 01:29PM

16 "ospf" refers to OSPF Version 3 as specified by the 01:29PM

17 IETF; correct? 01:29PM

18 A That is correct. 01:29PM

19 Q And transmit delay is a parameter that's 01:29PM

20 described in the OSPF standard; is that correct? 01:29PM

21 A So I found you the text in the Exhibit 56. Just 01:29PM

22 below the Rxmt, there is something called InfTransDelay. 01:29PM

23 This transmit delay refers to that. 01:29PM

24 MR. SILBERT: Right. 01:29PM

25 Okay. Why don't we take a break. 01:29PM

1 01:29PM

2 THE VIDEOGRAPHER: Going off the record, the time 01:29PM

3 is 1:29. 01:29PM

4 (Recess taken.) 01:30PM

5 THE VIDEOGRAPHER: Back on the record, the time 01:41PM

6 is 1:41. 01:41PM

7 Please continue. 01:41PM

8 BY MR. SILBERT: 01:41PM

9 Q Mr. Roy, would you please turn to page 19 of 01:41PM

10 Exhibit 54. 01:41PM

11 Do you see, about midway down that page, the 01:41PM

12 command expression "log-adjacency-changes"? 01:41PM

13 A Yes, I do. 01:41PM

14 Q Did you come up with that command expression? 01:41PM

15 A Yes, I did. 01:41PM

16 Q What is the function of this command? 01:42PM

17 A So OSPF protocol, one part of the protocol 01:42PM

18 machinery is trying to figure out if two devices are 01:42PM

19 talking to each other. We can discover, find each 01:42PM

20 other, and if something goes wrong, there is a state 01:42PM

21 machine which describes how we become what is known as 01:42PM

22 "adjacent." It's a term in the RFC. 01:42PM

23 The log-adjacency-changes is trying to log any 01:42PM

24 and all events which leads to a successful adjacency or 01:42PM

25 peering formation. If you enable this command, you 01:42PM

1 will -- you will see things which are getting logged on 01:42PM
2 a console or other ways you can collect logs, so that is 01:42PM
3 that functionality. 01:42PM
4 Q And -- thank you. That's helpful. 01:42PM
5 In prior versions of this document, Exhibit 54, 01:43PM
6 Cisco said that somebody named Valerie Swisher came up 01:43PM
7 with this command expression. 01:43PM
8 Do you know Valerie Swisher? 01:43PM
9 A I don't remember. 01:43PM
10 Q Don't remember ever meeting her? 01:43PM
11 A I mean, the name rings a bell, but I don't know 01:43PM
12 who this person is. Again, this is probably quite 01:43PM
13 dated. 01:43PM
14 Q Did she work on your team at any time? 01:43PM
15 A Not in the OSPF team I was, not to the best of my 01:43PM
16 recollection. 01:43PM
17 Q Did you model the "log-adjacency-changes" command 01:43PM
18 on a pre-existing command? 01:43PM
19 A To the best of my recollection, there was nothing 01:43PM
20 similar to this. This was very specific requirement for 01:44PM
21 link-state protocols, and I don't believe there was 01:44PM
22 any -- any other protocol which was making use of this. 01:44PM
23 Again, to the best of my recollection. 01:44PM
24 Q Okay. And -- still looking at Exhibit 54, do you 01:44PM
25 see the column "Date of Earliest Known Document," and it 01:44PM

1 says "October 12, 1998." 01:44PM
2 Do you see that? 01:44PM
3 A Yes, I do. 01:44PM
4 Q Is that -- to the best of your recollection, 01:44PM
5 coincide with approximately the time that you came up 01:44PM
6 with this command expression? 01:44PM
7 A Yes, that's roughly when it was. 01:44PM
8 MR. SILBERT: Okay. Let me show you the document 01:44PM
9 I was referring to and see if you can shed any light on 01:44PM
10 it, my prior question. 01:44PM
11 (Exhibit 59 was marked for 01:45PM
12 identification by the Court Reporter.) 01:45PM
13 MR. NEUKOM: What exhibit number is this one? 01:45PM
14 MR. SILBERT: 59. 01:45PM
15 THE WITNESS: 59. 01:45PM
16 BY MR. SILBERT: 01:45PM
17 Q Mr. Roy, have you seen Exhibit 59 before? 01:45PM
18 A I have seen some version of OSPF command 01:45PM
19 reference. I don't know which version this refers to, 01:45PM
20 but I've seen some version of OSPF command reference, 01:45PM
21 yes. 01:45PM
22 Q Okay. And whether or not you saw this specific 01:45PM
23 version before, what -- what is this document, to the 01:45PM
24 best of your understanding? 01:45PM
25 A This document lists -- lists some of the OSPF 01:45PM

1 thing that the operator typed with the command that we 02:06PM
2 have just been talking about that you implemented in 02:06PM
3 1998; correct? 02:06PM

4 MR. NEUKOM: Objection; vague. 02:06PM

5 THE WITNESS: Those are two different contexts. 02:06PM

6 The previous command we were talking about was in 02:06PM
7 router OSPF Version 2 routing context. 02:06PM

8 The OSPF Version 3 one is in router OSPFv3 02:06PM
9 routing context. 02:06PM

10 Those are two different contexts, but they are 02:06PM
11 both global routing contexts for two different protocols 02:06PM
12 called OSPF Version 2 and OSPF Version 3, if that makes 02:06PM
13 sense. 02:06PM

14 MR. SILBERT: Yeah, I think it does. 02:06PM

15 Q So your -- what you determined in 2001 was to use 02:06PM
16 the same command for OSPF Version 3 that was already 02:06PM
17 being used for OSPF Version 2; is that right? 02:06PM

18 A Yes. I think we have discussed this a few times. 02:06PM

19 We try to keep it as aligned as close to our 02:07PM
20 prior work. OSPF Version 2 was our prior work, and we 02:07PM
21 were working on OSPF Version 3. We kept that as the 02:07PM
22 dominant guiding force for most of the stuff, unless 02:07PM
23 there was really a need to depart from it, so this will 02:07PM
24 fall under the same premise. 02:07PM

25 Q All right. So this was another example where you 02:07PM

1 modeled the command "log-adjacency-changes" for OSPF 02:07PM
2 Version 3 on the pre-existing "log-adjacency-changes" 02:07PM
3 command that was used with OSPF Version 2? 02:07PM
4 A That is correct. 02:07PM
5 Q Okay. We are getting through it. 02:07PM
6 Could you go to the next page, please. 02:07PM
7 A 20? 02:07PM
8 Q Yes, page 20. 02:07PM
9 Okay. Do you see the command "maximum-paths" and 02:08PM
10 then, parentheses, OSPF Version 3? 02:08PM
11 A Yes. 02:08PM
12 Q Okay. And did you come up with that command 02:08PM
13 expression in around 2001? 02:08PM
14 A Yes. 02:08PM
15 Q Okay. And, again, the -- the parentheses here 02:08PM
16 indicate that the operator enters this command in the -- 02:08PM
17 is it OSPF router configuration context? Is that 02:08PM
18 correct? 02:08PM
19 A OSPF Version 3 router configuration context. 02:08PM
20 Q Thank you. 02:08PM
21 Now, if I look immediately above that row in -- 02:08PM
22 on page 20, there's the command expression 02:08PM
23 "maximum-paths" without the OSPFv3 in parentheses. 02:08PM
24 Do you see that? 02:08PM
25 A Yes, I see. 02:08PM

1 Q And was that a command that was used in the OSPF 02:08PM
2 Version 2 context? 02:09PM
3 A I mean, without looking at specific context, it's 02:09PM
4 hard to say. 02:09PM
5 Q Okay. 02:09PM
6 A It doesn't imply which context this might be. 02:09PM
7 This might be multiple contexts. 02:09PM
8 Q Okay. According to this document, you were not 02:09PM
9 the person who came up with the "maximum-paths" command 02:09PM
10 that doesn't have the OSPFv3 in parentheses; correct? 02:09PM
11 A Right. The one prior to the OSPFv3 one was not 02:09PM
12 created by me. 02:09PM
13 Q It was created, according to this document, by 02:09PM
14 someone named Anthony Li in or around July of 1995; is 02:09PM
15 that right? 02:09PM
16 A That's what this document seems to imply, yes. 02:09PM
17 Q Okay. Do you know Mr. Li? 02:09PM
18 A Yes, Tony, Tony Li. 02:10PM
19 Q Do you know, is he still at Cisco? 02:10PM
20 A Tony is no longer with Cisco. 02:10PM
21 Q Okay. When you came up with the expression 02:10PM
22 "maximum-paths" in the OSPFv3 context, did you model it 02:10PM
23 after the pre-existing command "maximum-paths" that was 02:10PM
24 used since approximately 1995? 02:10PM
25 A Yes. That was the dominant decision-maker. 02:10PM

1 Q Okay. Again, I think some of these your 02:10PM
2 testimony may be similar, but we'll -- we'll go through 02:10PM
3 all of them. 02:10PM
4 Could you please turn to page 22 of Exhibit 54. 02:10PM
5 A Yes. 02:11PM
6 Q Okay. And, again, just below -- halfway down the 02:11PM
7 page, do you see the entry for "passive-interface 02:11PM
8 (OSPFv3)"? 02:11PM
9 A Yes, I do. 02:11PM
10 Q And did you come up with that expression around 02:11PM
11 August of 2001? 02:11PM
12 A Yes, I did. 02:11PM
13 Q And, again, if you look immediately above that 02:11PM
14 row on the table, there's the expression 02:11PM
15 "passive-interface." 02:11PM
16 Do you see that? 02:11PM
17 A Yes. 02:11PM
18 Q And according to this document, the 02:11PM
19 author/originator was Cisco, slash, Kirk -- is it 02:11PM
20 pronounced "Lougheed" or -- 02:11PM
21 A "Lougheed." 02:11PM
22 Q "Lougheed"? 02:11PM
23 A Mm-hmm. 02:11PM
24 MR. NEUKOM: "Lougheed." 02:11PM
25 MR. SILBERT: "Lougheed"? 02:11PM

1 Q -- in around April of 1989. 02:11PM

2 Do you see that? 02:11PM

3 A Yes, I do. 02:11PM

4 Q So when you came up with the expression 02:11PM

5 "passive-interface" in the OSPFv3 context, did you model 02:12PM

6 it after the pre-existing command "passive-interface" 02:12PM

7 that was used, apparently, since approximately 1989? 02:12PM

8 A Yeah, that was, again, the dominant 02:12PM

9 decision-maker for us. 02:12PM

10 Q Okay. And if you would turn, please, to page 24 02:12PM

11 of Exhibit 54, do you see the command expression 02:12PM

12 "router-id (OSPFv3)"? 02:12PM

13 A Yes, I do. 02:12PM

14 Q Did you come up with that expression in around 02:12PM

15 July of 2007 -- excuse me, 2011? 02:12PM

16 A 2011. Do we have -- do we have any document 02:13PM

17 which has that date? Do we have anything, or is that a 02:13PM

18 typo? 02:13PM

19 Q Oh, versus 2001? 02:13PM

20 A Yeah, possibly. 02:13PM

21 Q Yeah, I'll just -- I don't know the answer, but 02:14PM

22 since you are questioning it, I'll just point out that 02:14PM

23 on page 22, for "passive-interface" that we were just 02:14PM

24 looking at, it appears to be the same earliest-known 02:14PM

25 document. It's got the same Bates number, and the date 02:14PM

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1 there is August 31, 2001. Here it's July 25, 2011. I 02:14PM
2 don't know the significance of that, but -- 02:14PM
3 A So for -- for dates like this, I think the 02:14PM
4 best -- best way to find out is EDCS has a history of 02:14PM
5 when the documents are checked in, and that's probably 02:14PM
6 the most reliable source to say what is exact date. 02:15PM
7 Q Okay. So leaving aside the date, did you come up 02:15PM
8 with the command expression "router-id" in the OSPFv3 02:15PM
9 context? 02:15PM
10 A Yes, I did. 02:15PM
11 Q And, again, if you look immediately above that 02:15PM
12 entry in the table, there's the command expression 02:15PM
13 "router-id" that's not in the OSPFv3 context; correct? 02:15PM
14 A Yes, I see that. 02:15PM
15 Q And according to this document, at least, that 02:15PM
16 command expression was authored or originated by 02:15PM
17 someone -- Cisco and someone named James Gibson in 02:15PM
18 around March of 1999. 02:15PM
19 Do you see that? 02:15PM
20 A Yes. 02:15PM
21 MR. NEUKOM: Objection; document speaks for 02:15PM
22 itself. 02:15PM
23 BY MR. SILBERT: 02:15PM
24 Q And do you know Mr. Gibson? 02:15PM
25 A I know James, yes. 02:15PM

1 Q Is he still at Cisco? 02:15PM

2 A I don't know for sure. 02:16PM

3 Q Okay. When you came up with a command expression 02:16PM

4 "router-id" in the OSPFv3 context, did you model it on 02:16PM

5 the pre-existing command expression "router-id"? 02:16PM

6 A Yes. That was our dominant reason for the 02:16PM

7 choice. 02:16PM

8 Q Okay. And router-id is a parameter that exists 02:16PM

9 in the OSPF standard; is that correct? 02:16PM

10 MR. NEUKOM: Objection; vague, calls for opinion. 02:16PM

11 THE WITNESS: Do you have anything you can point 02:16PM

12 to? 02:16PM

13 MR. SILBERT: Yeah. 02:16PM

14 Q Do you have Exhibit 56, the OSPF specification? 02:16PM

15 A Yeah. Yeah. 02:16PM

16 Q Can you look at the Bates page that -- the page 02:16PM

17 that ends in Bates No. 6 -- 602. 02:16PM

18 A 602, yes. 02:17PM

19 Q Do you see -- are you on that page? 02:17PM

20 A Yes, I am. 02:17PM

21 Q Do you see the bolded term "Router ID"? 02:17PM

22 A Yes, I see that. 02:17PM

23 Q And it says, "A 32-bit number assigned to each 02:17PM

24 router running the OSPF protocol," and then it goes on. 02:17PM

25 Do you see that? 02:17PM

1 A Yeah, I see that. 02:17PM

2 Q And the command "router-id," is that implementing 02:17PM

3 the same feature that's described in the OSPF 02:17PM

4 specification as "Router ID"? 02:17PM

5 A Yes. The router, dash -- router, hyphen, id 02:17PM

6 implements the functionality provided by the router, 02:17PM

7 space, ID in this RFC. 02:18PM

8 Q Okay. Okay. Let's go to page 30 of Exhibit 54. 02:18PM

9 Do you see, on the lower half of the page, the 02:18PM

10 command expression "show ipv6 interface"? 02:18PM

11 A Yes, I do. 02:18PM

12 Q And did you come up with that command expression 02:18PM

13 in around June of 2001? 02:19PM

14 A Would you have a copy of the document which is in 02:19PM

15 the next row, the 112494? 02:19PM

16 MR. SILBERT: In the next row. We may. 02:19PM

17 Do you want to look, Lizzie? It would be in that 02:19PM

18 box. No, he's talking about the next row down. It 02:19PM

19 would have the Bates numbers that end at 769 on the last 02:19PM

20 page. 02:19PM

21 Q We can look, but are you questioning the date? 02:19PM

22 Is that the reason you're -- 02:19PM

23 A The date is fine. I was expecting the same ENG 02:20PM

24 number up here also. If it is missing, I don't know why 02:20PM

25 it's missing. 02:20PM

1 Q Do you mean for the -- 02:20PM

2 A The whole -- the whole "show ipv6 ospf" is all 02:20PM

3 sort of done together as part of that project, and I was 02:20PM

4 expecting that to show the same ENG number. 02:20PM

5 Q Okay. So as you sit here today, do you not know 02:20PM

6 whether you came up with the command expression "show 02:20PM

7 ipv6 ospf" or not? 02:20PM

8 A So the whole "show IPv6 ospf" and all 02:20PM

9 sub-commands under that, all of that I came up with. 02:20PM

10 Q Okay. You are just questioning whether there 02:20PM

11 should be a different document listed in the -- 02:20PM

12 A I was expecting -- 02:20PM

13 Q -- document column? 02:20PM

14 A -- that same document pointing -- 02:20PM

15 Q Okay. 02:20PM

16 A -- and that's throwing me off a bit. 02:20PM

17 Q Okay. And do you believe you came up with that 02:20PM

18 command "show ipv6 ospf" sometime in 2001, around 02:21PM

19 June 2001? 02:21PM

20 A In 2001. 02:21PM

21 Q Okay. 02:21PM

22 A Somewhere, yeah. 02:21PM

23 Q And -- 02:21PM

24 MR. NEUKOM: David, we have a copy of that 02:21PM

25 document, if you would like it. 02:21PM

1 MR. SILBERT: Okay. 02:21PM

2 MR. NEUKOM: We've got -- again, I don't want to 02:21PM

3 get in the way of your deposition. 02:21PM

4 MR. SILBERT: Okay. 02:21PM

5 MR. NEUKOM: If you don't want it, no worries, 02:21PM

6 but I think we have got three copies of -- of that 02:21PM

7 document, so if you want it at some point, just let us 02:21PM

8 know. 02:21PM

9 MR. SILBERT: Okay. Thanks. I'm not sure it's 02:21PM

10 critical at this point, so it might -- as I understand 02:21PM

11 Mr. Roy, it might merit a revision to Exhibit F, but -- 02:21PM

12 no, she's shaking her head. Okay. 02:21PM

13 Q The -- when you came up with the command "show 02:21PM

14 ipv6 ospf," did you model it on a pre-existing command 02:21PM

15 "show ip ospf"? 02:21PM

16 A Yes. That was, again, the dominant choice. 02:22PM

17 Q Okay. And so, again, what you did with respect 02:22PM

18 to this command, "show ipv6 ospf," is take the existing 02:22PM

19 command and change "ip" to "ipv6"; is that right? 02:22PM

20 A Basically, we have multiple choices when we are 02:22PM

21 part of the project. We could have done things like 02:22PM

22 "show ospfv3" or show any other variant of it. We ended 02:22PM

23 up choosing "show ipv6 ospf," so anything related to 02:22PM

24 OSPF Version 3, we tried to stick to the same IPv6 OSPF 02:22PM

25 construct everywhere. This is a "show" command stuff. 02:22PM

1 What you were looking at earlier was configuration, and, 02:22PM
2 again, consistency is -- is quite important, so you want 02:22PM
3 to keep one theme all across all of the place. 02:22PM

4 Q And in -- "ipv6" in the command "show ipv6 ospf" 02:23PM
5 refers to Internet Protocol Version 6 as specified by 02:23PM
6 the IETF? 02:23PM

7 A That is correct. 02:23PM

8 Q And "ospf" in the command "show ipv6 ospf" refers 02:23PM
9 to OSPF Version 3 as specified by IETF? 02:23PM

10 A In the context OSPF, "ospf" refers to the OSPF 02:23PM
11 Version 3 spec RFC in the IETF, yes. 02:23PM

12 Q Okay. And when you came up with this command 02:23PM
13 expression, Cisco already used commands with the syntax 02:23PM
14 "show" blank; correct? 02:23PM

15 A The top-level keyword "show" pre-existed at that 02:23PM
16 point, yes. 02:24PM

17 Q And before you joined Cisco, were you familiar 02:24PM
18 with other companies who use CLI commands that included 02:24PM
19 a top-level keyword "show"? 02:24PM

20 MR. NEUKOM: Objection; vague and compound. 02:24PM

21 THE WITNESS: And I don't recall studying CLI of 02:24PM
22 various companies before I came to Cisco, and that was 02:24PM
23 already almost 20 years ago, in '96. 02:24PM

24 BY MR. SILBERT: 02:24PM

25 Q Going back to the '80s, did you use CLIs in the 02:24PM

1 '80s? 02:24PM

2 A So in my -- in my -- you are referring to my 02:24PM

3 previous work or my knowledge of the industry or? 02:24PM

4 Q In your life. 02:25PM

5 MR. NEUKOM: Same objections -- oh, never mind. 02:25PM

6 Sorry, different question. No objection to the current 02:25PM

7 question. 02:25PM

8 THE WITNESS: Before Cisco, I don't recall any 02:25PM

9 specific CLIs I have developed. I may have, but, again, 02:25PM

10 this is so old, that I don't have any specific memory of 02:25PM

11 anything. 02:25PM

12 BY MR. SILBERT: 02:25PM

13 Q Okay. And to be clear, I'm not asking you about 02:25PM

14 CLIs that you developed on; I'm asking you about any 02:25PM

15 CLIs that you might have used. 02:25PM

16 A Again, I can't remember any specific CLI I have 02:25PM

17 used anywhere. Now, I have used programs like 02:26PM

18 Windows 95 way back when, and, yes, there are commands 02:26PM

19 you could type on a prompt. That I'm aware of, and, 02:26PM

20 yes, I have used, if that's what you are asking. 02:26PM

21 Q Okay. And do you recall using CLI 02:26PM

22 commands -- strike that. 02:26PM

23 Do you recall using, prior to the time you joined 02:26PM

24 Cisco, CLI commands that use the word "show" as the 02:26PM

25 top-level keyword? 02:26PM